BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In the Matter of	)	
	)	
In the 1.7 GHz and 2.1 GHz Bands	)	WT 02-353
Service Rules for Advanced Wireless	)	
Services	)	
	)	

COMMENTS OF ERICSSON INC

Ericsson Inc ("Ericsson") hereby submits comments in response to the Federal Communications Commission's ("Commission") Notice of Proposed Rulemaking entitled *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT 02-353, released November 22, 2002 ("NPRM"). In this rulemaking, the Commission seeks comment on service rules for Advanced Wireless Services ("AWS"), particularly on provisions for application, licensing, operating and technical rules, and for competitive bidding.

The Commission has recognized that, for the communications industry to better serve the public, regulatory policy should strive to eliminate barriers to and facilitate the provision of new services.[1] The Commission's stated goal for service providers is to put the 1710-1755 MHz and 2110-2155 MHz radio frequency bands to their highest value use with minimal transaction costs.[2] Ericsson supports the Commission's efforts in this regard. Ericsson urges the Commission to address AWS service rules expeditiously,

[1] Notice of Proposed Rulemaking entitled *Service Rules for Advanced Wireless Services in the 1.7 GHz and 2.1 GHz Bands*, WT 02-353, released November 22, 2002 ("NPRM") at ¶ 2.

consistent with its comments below, so that these bands can be made available for AWS (IMT-2000 / 3G), with the necessary regulatory clarity. Such regulatory clarity is in the public interest because it will support investment and allow consumers to realize the benefits of AWS.

Flexible Allocation

Incorporating appropriate flexibility into the service rules for the 1710-1755 MHz and 2110-2155 MHz bands is imperative to ensure the successful development and deployment of AWS. The Commission's experience in regulating PCS services illustrates particularly well the positive impact of flexibility in service rules. Flexibility serves to encourage industry investment, promote competition, and foster technological innovations. In order to maximize the efficient and intensive use of the bands at issue in this proceeding, the Commission should adopt a similar approach for AWS. Such an approach is in the public interest.

Further, because the proliferation of AWS is, in many respects, a global initiative, it is important that the Commission consider the international impacts of its service rules. The Commission should principally promulgate those rules that encourage global roaming and economies of scale. In this way, the Commission will ensure that many of the significant promises of AWS, such as ubiquitous globally harmonized services and the benefits from global markets, are realized to the fullest extent possible.

As noted above, Ericsson recommends that the Commission adopt a regulatory model for AWS that is similar to its PCS service rules. The PCS model has been shown to be extremely effective in encouraging the efficient use of spectrum and the

[2] Id.

development of competitive markets. Ericsson also suggests that the Commission establish a reasonable build out standard, such as the "substantial service" standard set forth in the PCS service rules, to allow industry to move rapidly toward deployment of AWS while also serving the needs of consumers.

Relocation Fund

Ericsson supports the establishment of a relocation fund. Such a resource is a valuable tool to clear presently occupied segments within these bands. Further, a relocation fund would help pave the way for the more expeditious and broader scale deployment of AWS.

Geographic Area Licensing

The Commission also proposes to adopt a geographic area licensing scheme in its AWS service rules. Ericsson supports this approach to licensing and encourages the Commission to permit aggregation of rural and urban service areas so as to allow service areas that permit nationwide coverage. Aggregation of service areas is particularly important however the Commission must also balance the incentive for investment inherent in nationwide licenses with the need to ensure that development of AWS is not delayed or forestalled, especially in rural areas,. Further, the ability to aggregate licenses or, post-auction, to disaggregate service areas (to permit spectrum trading) allows for a tailored service area without sacrificing less populated areas.

Spectrum Blocks and Pairing

The Commission also seeks comment on the amount of spectrum that should be included in each license as well as the related issue of whether these bands should be paired. The Commission sets forth a variety of pairing alternatives in the NPRM.

However, Ericsson is not confident that any of these alternatives will necessarily achieve the Commission's goals of conserving resources, and expediting the development and offering of services.[3]

Instead, Ericsson offers another possible proposal: three licenses of 2x15 MHz, paired. Ericsson considers three licenses of 2x15 MHz to be a preferable licensing option because it reduces the need for and the number of guard bands, makes efficient use of the spectrum, and supports a more viable AWS business plan. Moreover, if this alternative is combined with the ability to aggregate and disaggregate spectrum blocks and service areas, as Ericsson recommends above, the Commission would allow the market to devise spectrum configurations that meet the needs of industry. This approach would thereby further the Commission's goals by allowing market forces to operate freely to ensure the diversity of services offered to consumers, the adequacy of spectrum for flexible uses, as well as the ability of small business to provide niche services.

Further, Ericsson supports the pairing of 1710-1755 MHz with the band 2110-2155 MHz to create the 2x15 MHz blocks. With regard to the global initiative, it is important that the Commission take into account the international impact of its service rules and consider providing rules that establish the band 1710–1755 MHz for the mobile station transmit direction (upstream) and the band 2110–2155 MHz for the base station transmit direction (downstream). This pairing and block size would support the symmetric allocation of spectrum while not precluding asymmetrical traffic demands, particularly considering frequency division duplex (FDD), among other technologies,

[3] *See* NPRM at ¶ 28.

which is well suited for ubiquitous multi-carrier environments and wide-area coverage, and is capable of supporting new AWS, including IMT-2000/3G.

In addition, Ericsson encourages the Commission to consider the consequences of employing too broad of an approach for the flexible use of the spectrum. For example, if the Commission were to provide for uncoordinated deployments of different spectrum access technologies, large guard bands would be required. This action would negatively impact the efficient use of spectrum and undermine the Commission's goals in providing for flexible use of the spectrum in the first place. By examining the full impact of its policies and rules, the Commission can limit the undesired effects of its policy decisions and foster industry confidence, which is necessary for investment and innovation in newly licensed spectrum.

Spectrum Aggregation Limits

Ericsson supports the Commission's tentative conclusion that no aggregation limits are necessary in this band. Moreover, Ericsson supports the Commission's tentative conclusion that no set asides or eligibility requirements are necessary either. Sufficient market mechanisms and Commission oversight exist to safeguard against anti-competitive behavior. Additional regulatory safeguards are unnecessary.

Further, Ericsson supports a license term greater than 10 years. Regulatory and license clarity is a core element in the valuation of spectrum. A license term of at least 15 years is fair and reasonable, and encourages substantial capital investment in networks and markets, which ensures spectrum is put to its highest value use. Therefore, Ericsson recommends that there be a strong expectancy of renewal in any license granted.

Ericsson concurs with the Commission that performance requirements are a valuable way for it to protect the public interest. In the case of AWS, a "substantial service" performance requirement is all that is necessary for the Commission to adequately protect the public and achieve its policy goals. Moreover, in some instances, such as where the entire spectrum is auctioned and licensees are subject to market pressure to deploy infrastructure and generate revenues rapidly, no performance requirements may be needed to achieve the Commission's goals. Accordingly, Ericsson recommends that a "substantial service" performance requirement, modeled after the PCS rules, be adopted for AWS.

Partitioning and Disaggregation

As discussed above, Ericsson considers the ability of carriers to aggregate service areas to be critical. Wide area networks are essential for the successful deployment of the AWS that carriers and consumers expect. Aggregation is necessary for carriers to support such networks. In addition, partitioning and/or disaggregation will permit the use of spectrum sharing. Thus, smaller licensees will be able to economically provide service in remote and rural areas.

Technical Rules

Ericsson generally supports the technical rules proposed by the Commission in paragraphs 54-71 of the NPRM. For the most part, Ericsson's interference concerns will be adequately addressed if the Commission's AWS rules are patterned after its PCS rules, with the recommended duplex direction stated above. However, Ericsson does have significant interference concerns that it would like to address herein.

First, Ericsson seriously and strongly recommends that the Commission not authorize the concurrent use of base and mobile transmitters in both bands. This restriction will eliminate a substantial source of interference and limit the opportunity for wide scale service quality degradation. Accordingly, it is a reasonable restriction that is in the public interest.

Second, Ericsson supports a cooperative approach to the resolution of in-band interference issues. Bilateral agreements, negotiated between adjacent operators independent of the Commission, are a particularly effective tool that allows adjacent operators to set appropriate emission limits. Because bilateral agreements also allow adjacent operators to coordinate service at higher jointly acceptable emissions, they are an important way to facilitate the highest and most efficient use of spectrum. Ericsson considers bilateral agreements to be a preferable approach to resolution of in-band interference issues.

When coordination is not possible, Ericsson believes that default emission limits are appropriate. In such circumstances, Ericsson recommends the use of emission limits similar to those established for PCS, or 47 dB□V/m. A lower emission limit could significantly increase the extent of areas with poor service coverage in some localities and could be a major problem in urbanized areas on the service border. Therefore, a lower emission limit is not advisable.

Third, Ericsson concurs that the inter-block interference measures established for WCS are equally appropriate for AWS. Ericsson agrees that a power attenuation of 43+10log(P) for technologies with channel bandwidths of up to 5 MHz is reasonable.

Further, power attenuation according to this value sufficiently controls interference at the upper and lower frequency edges.

Fourth, Ericsson generally agrees that the guidelines in TIA Technical Report-10F are appropriate to address issues involving interference with incumbents. However, the continued existence of microwave incumbents after AWS is authorized could significantly impact the ability of carriers to launch new services. Similarly, the delayed relocation of precision-guided munitions is likely to impact service availability and provide some uncertainty in the marketplace. Accordingly, the existence of such incumbents should be factored into any service performance metric.

Ericsson also has serious reservations regarding the propriety of a secondary status for munitions at some sites. Ericsson is concerned about the effect of such a designation on the safety of Department of Defense and civilian personnel. Ericsson is also concerned about the interference caused by such applications. Ericsson recommends that such applications be removed prior to the launch of any AWS in the affected bands and geographic areas. Removal of such applications is in the public interest because it will ensure that there is sufficient certainty, about the suitability of spectrum in these areas for AWS, to generate appropriate interest.

Fifth, consistent with the Commission's approach in establishing emissions limits in the PCS band, Ericsson recommends that common out-of-band and spurious emissions limits be identified. Common limits will ensure that the radio frequency blocks are of comparable value at auction. In addition, common limits will ensure that AWS equipment is readily available so as to speed the deployment of services.

On the other hand, if differing out-of-band and spurious interference limits are established for different frequencies in the band, such as if more restrictive emissions limits are set for frequencies close to band edges, these frequencies would likely be considered significantly less valuable by bidders. If carriers need a guard band and/or expensive band edge filters to meet the out-of-band and spurious emissions requirements established by the Commission for frequencies close to edges, these frequencies are likely to generate significantly less revenue. There is no technical reason nor is it in the public interest to diminish the value of this spectrum in this way.

Sixth, the EIRP limits set forth in the PCS rules are generally appropriate and Ericsson supports similar limits in the AWS rules. In setting these limits, however, the Commission should be aware that the opportunity for significant interference exists if a high power base station transmits on an adjacent channel to a high gain base station receiver. To prevent this situation from occurring, Ericsson suggests that the upstream be in the lower band and downstream in the upper band, so that the duplex spacing is exactly 400 MHz. This action would align the duplex direction with the international allocation for IMT-2000 (AWS), which identified the band 1920–1980 MHz as the uplink and the 2110–2170 MHz as the downlink. This alignment is critical for maximum reuse of components between the new US bands and the international market, which is important for industry and consumers to realize the economies of scale benefits of AWS and global harmonization.

Last, Ericsson supports the proposed rules for RF safety, as the requirements suggested by the Commission are appropriate.

Other Technical Rules

For other general technical rules, the general provisions of Part 24 are appropriate for AWS. Based on the success of the existing PCS market, Ericsson considers it to be fair and reasonable to apply similar rules to AWS. Further, such action promotes regulatory clarity and consistency.

Ericsson also concurs with the Commission that it is appropriate to establish emissions limits to prevent harmful interference across U.S. borders with Canada and Mexico. The co-channel and adjacent channel emission limits discussed in paragraphs 55-61 of the NPRM appear to be appropriate for cross-border coordination. To further supplement the Commission's efforts to foster cross-border coordination, Ericsson urges the Commission to commence immediately bilateral government discussions based on the proposed limits. This action will ensure that there are clear rules established prior to the competitive bidding on spectrum, which will increase its value to carriers, particularly in those markets that neighbor Canada and Mexico.

Conclusion

Ericsson recommends that the Commission promulgate rules for AWS, including IMT-2000, consistent with its detailed comments set forth above, particularly the pairing of the 1710–1755 MHz band as the uplink with 2110–2155 MHz band as the downlink. By making its rules consistent to the extent possible and support for a common downlink band with the international allocation for IMT-2000, the Commission will ensure regulatory clarity and certainty, which will increase the efficient use and value of spectrum. In this way, the Commission will ensure the highest value and most efficient

use of this new spectrum. Such action is in the public interest and will allow industry to bring the full panoply of advanced wireless services to consumers in a timely fashion.

DATED this 7th day of February 2003.

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